



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,361	09/24/2003	Yuji Yoshikawa	242919US0	4702

22850 7590 12/13/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
----------

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/668,361	YOSHIKAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael J. Feely	1712	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10 is/are rejected.
- 7) ☒ Claim(s) 7,8 and 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0903,0704</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ochiai et al. (Pub. No.: US 2002/0021393).

Regarding claims 1-4, and 10, Ochiai et al. disclose: *(1)* an antireflection film to be formed on at least one surface of a substrate (Abstract) comprising:

(1) a high refractive index layer (Abstract) formed of a first coating composition in the cured state (paragraph 0023) primarily comprising: (A) metal oxide fine particles comprising at least one oxide selected from the group consisting of titanium oxide, aluminum oxide, zirconium oxide, cerium oxide, iron oxide, tin oxide, an compound oxides thereof (paragraph 0023), and having an average particle size of 1 to 500 nm (paragraph 0031); and (B) a compound having in a molecule at least one group of at least one type selected from the class consisting of an acrylic, methacrylic, vinyl and styryl group (paragraphs 0023-0026), and/or (C) a compound having in a molecule at least two groups of at least one type selected from the class consisting of an epoxy and oxetane group (paragraphs 0023 and 0028-0030: *polymers thereof*);

(2) a low refractive index layer (Abstract) formed of a second coating composition in the cured state (paragraphs 0040-0042) primarily comprising: (D) silica based inorganic oxide fine particles having void in the interior and having an average particle size of 1 to 500 nm (paragraph 0041); and (B) a compound having in a molecule at least one group of at least one type selected from the class consisting of an acrylic, methacrylic, vinyl and styryl group (paragraphs 0040 and 0028-0030: *polymers thereof*), and/or (C) a compound having in a molecule at least two groups of at least one type selected from the class consisting of an epoxy and oxetane group (paragraphs 0040 and 0028-0030: *polymers thereof*);

said high refractive index layer and said low refractive index layer being successively stacked (Abstract); (2) the antireflection film of claim 1, comprising:

(1) a high refractive index layer (Abstract) formed of a first coating composition in the cured state (paragraph 0023) primarily comprising: (A) metal oxide fine particles comprising at least one oxide selected from the group consisting of titanium oxide, aluminum oxide, zirconium oxide, cerium oxide, iron oxide, tin oxide, an compound oxides thereof (paragraph 0023), and having an average particle size of 1 to 500 nm (paragraph 0031); and (B) a compound having in a molecule at least one group of at least one type selected from the class consisting of an acrylic, methacrylic, vinyl and styryl group (paragraphs 0023-0026);

(2) a low refractive index layer (Abstract) formed of a second coating composition in the cured state (paragraphs 0040-0042) primarily comprising: (D) silica based inorganic oxide fine particles having void in the interior and having an average particle size of 1 to 500 nm (paragraph 0041); and (C) a compound having in a molecule at least two groups of at least one type selected from the class consisting of an epoxy and oxetane group (paragraphs 0040 and

Art Unit: 1712

0028-0030: *polymers thereof*); said high refractive index layer and said low refractive index layer being successively stacked (Abstract); (3) wherein component (B) is a compound having at least two acrylic groups in a molecule (paragraphs 0025-0027); (4) wherein component (B) is a compound having at least two acrylic groups and a benzene ring in a molecule (paragraphs 0025-0027); (10) an antireflection film-bearing article having the antireflection film of claim 1 formed on at least one surface of the substrate (Abstract).

Regarding claims 5 and 6, Ochiai et al. do not disclose the limitations of claims (5 & 6); however, these limitations are not explicitly required by the claims. Component (C) remains optional, as set forth in claim 1 (“and/or”).

***Claim Rejections - 35 USC § 102/103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ochiai et al. (Pub. No.: US 2002/0021393).

Regarding claim 9, Ochiai et al. disclose that their first coating is cured by irradiating it with actinic energy radiation (*see paragraph 0039*); however, their second coating is cured by thermal energy (*see paragraph 0046*). Still, all of the material limitations are satisfied.

Claim 9 is a product-by-process claim. It has been found that, “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of

Art Unit: 1712

production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process,” – *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Therefore, it appears that the instantly claimed product would have been the same as or an obvious variation of the product of Ochiai et al., regardless of the curing mechanism used in the second layer because Ochiai et al. satisfy all of the material limitations of the instantly claimed product.

#### ***Allowable Subject Matter***

6. Claims 7, 8, and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7, 8, and 11-13, the Ochiai et al. is the closest prior art; however, they fail to teach or suggest the incorporation of a free radical generator or a photo-acid generator in their second coating composition. They thermally cure this layer; therefore, there would be no need for these compounds (*see paragraphs 0044-0046*).

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Ochiai et al. reference is also available as US Pat. No. 6,657,691. Yamaki et al. (Pub. No.: US 2005/0109238) is related to the instant invention, featuring fine hollow particles; however, they do not multilayered antireflection film of he instant claims.

Art Unit: 1712

***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely  
Primary Examiner  
Art Unit 1712

December 9, 2005

**MICHAEL FEELY  
PRIMARY EXAMINER**